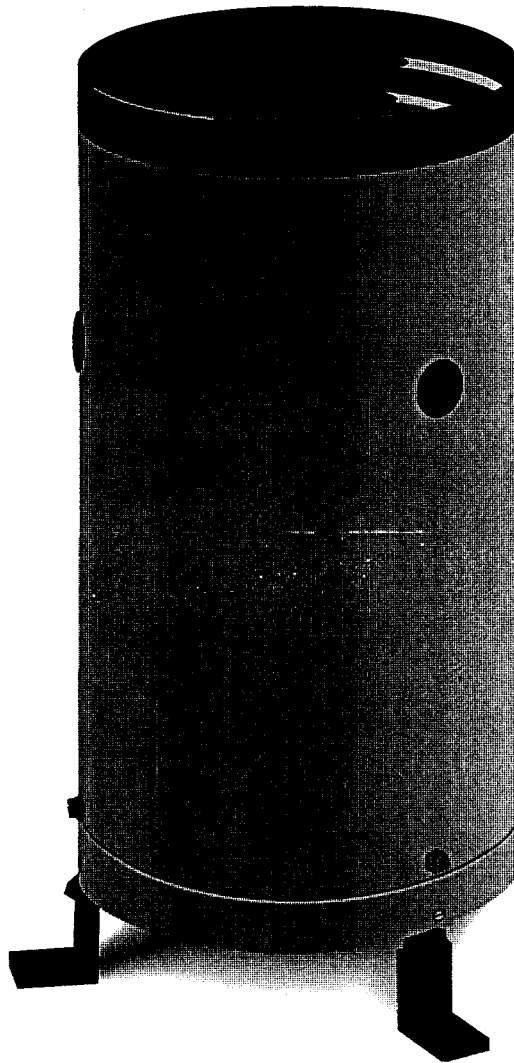


® RG-2500 Series

® Tipping Bucket Rain Gauge



Operator's Manual



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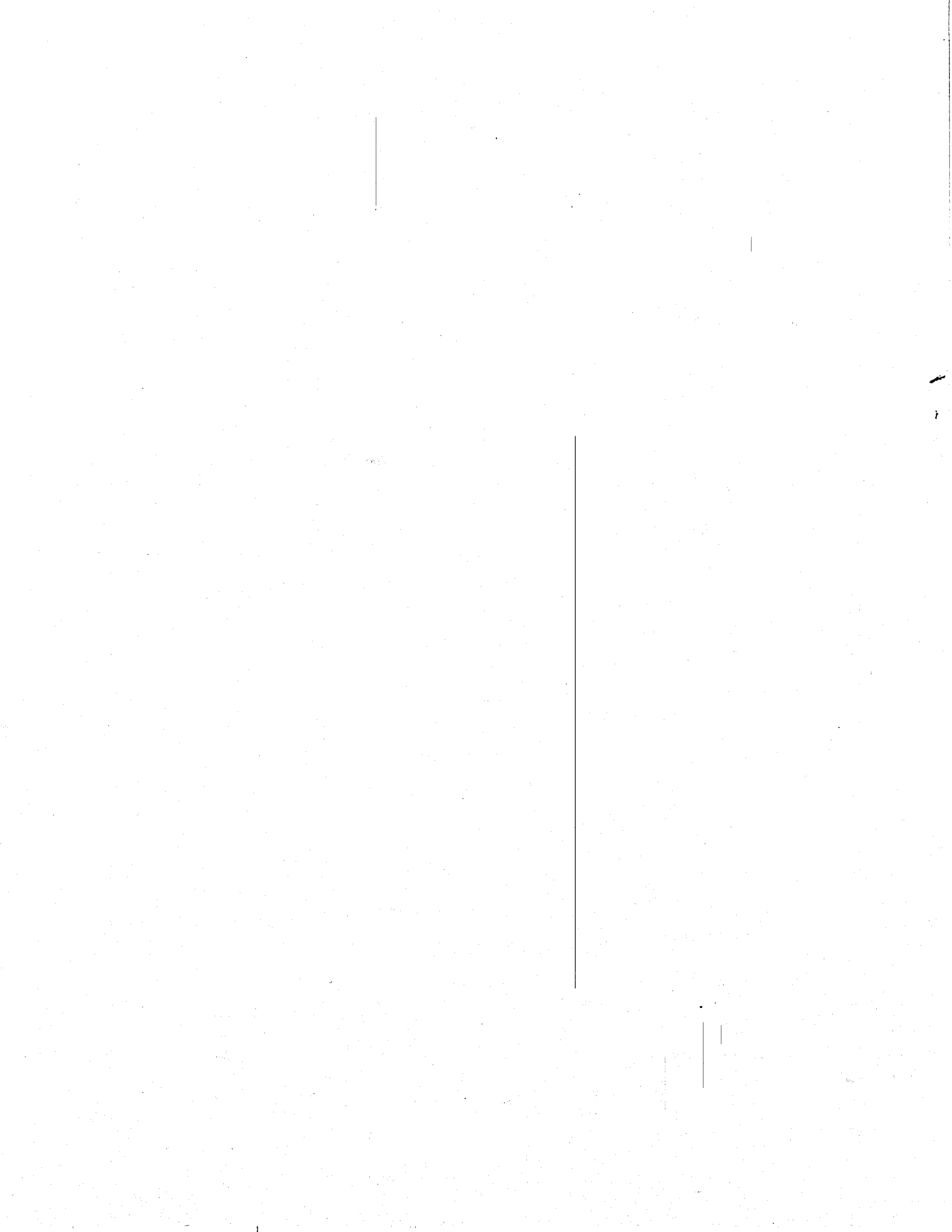
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Unpacking Instructions

Remove the Packing List and verify that you have received all equipment, including the following (quantities in parentheses):

RG-2500 Tipping Bucket Rain Gauge (1)

Operator's Manual (1)

If you have any questions about the shipment, please call the OMEGA Customer Service Department.

When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.



NOTE

The carrier will not honor damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

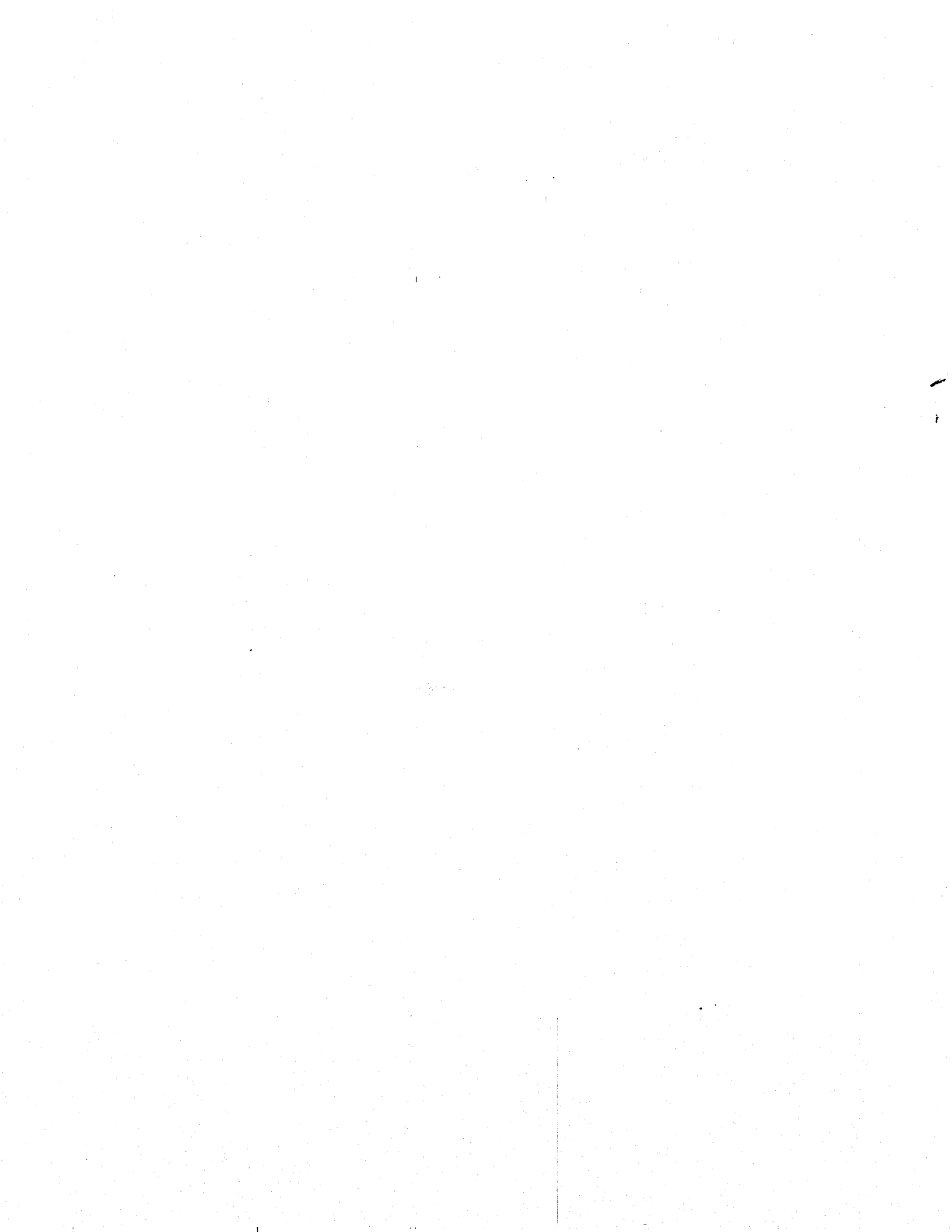


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Chapter 1: Introduction

1.1 General Description

The RG-2500 Series consists of two high quality rain gauges, Models RG-2500 and RG-2500-12. Model RG-2500 features a standard eight-inch diameter orifice, while the Model RG-2500-12 has a twelve-inch diameter orifice. Both gauges have been designed with high grade materials and have been built to provide years of trouble-free operation.

Each of the two gauges consists of a main collection funnel, an outer cover, an internal funnel, a tipping bucket and magnetic switch assembly, a base, and mounting feet with leveling adjustments.

Electrically heated versions of both gauges can be provided for use in cold climates, for measuring frozen precipitation such as snow and sleet. The electrically heated versions include the features listed above plus a heater element, a thermostat, a fuse holder and fuse, and associated wiring and terminal blocks. The model numbers for the heated rain gauges are RG-2500E and RG-2500E-12.

1.2 Specifications

Capacity: Unlimited

Orifice:

RG-2500: 8" (20 cm)

RG-2500-12: 12" (30 cm)

Calibration: 0.01" per tip (0.25 mm), others on request

Accuracy: $\pm 1\%$ for 1 to 3 inches per hour, $\pm 3\%$ for 0 to 6 inches per hour

Switch: Magnetic reed, SPST N.O., 10 Watts, 200 Vdc, 0.5 A max

Dimensions:

RG-2500: 8" x 17"

RG-2500-12: 12" x 20"

Weight/Shipping:

RG-2500: 7 lbs/12 lbs

RG-2500-12: 14 lbs/18 lbs

Optional Accessories:

Wind Screen, Alter Type

Model RG-952

Event Recorder, Drum Chart

Model RG-6113-A

Calibrator Bottle

Model RG-2595

Digital Event Counter

Model RG-2596

Chapter 2: Installation

2.1 Site Requirements

The location of the rain gauge is very important to the successful operation of the instrument. The most accurate measurements are made in relatively sheltered areas protected from gusting and turbulent winds. Openings in orchards or a grove of trees offer the best exposure for the rain gauge. Fences and other structures can help serve as a wind break as long as they are not too tall. In areas that are open with no nearby structures, a wind screen such is recommended to protect against wind effects.

Generally, the heights of objects near a rain gauge should be proportional to the distance away from the gauge. The distance of a nearby object should always be at least twice the height of the object above the gauge.

Wind effects on catch losses are more pronounced during snow storms than during a rain storm. A wind screen is generally not used at locations where snowfall constitutes less than 20% of the mean annual precipitation.

Good locations do not always remain free of obstructions. Vegetation can grow quickly, changing an excellent exposure into a poor one. Sites should be inspected regularly in order to properly maintain the exposure of the gauge.

In locations with heavy snowfall, the gauge should be mounted on a support or tower to place the gauge well above the average local snow level. The exposure would be best if the tower were to be located among trees of the same height as the tower.

2.2 Installation

OMEGA® rain gauges are shipped as a complete assembly with no additional assembly required. The gauge, however, should be installed onto a platform or foundation that is fairly close to being level to minimize the amount of adjustment required after the gauge is mounted. Each gauge is equipped with three mounting brackets that also serve as feet. Each foot has a mounting hole with a diameter of 3/8 inches. The holes in the feet should be matched to anchor bolts located in the foundation or on the platforms. For severely tilted foundations, use a set of three hex nuts on each bolt to provide leveling and locking of the rain gauge onto the foundation. For slightly tilted foundations, use the adjustable leveling knobs above each foot to level the gauge. An internally mounted spirit level may be used to assist in the leveling process. A rough level can be taken by placing a carpenter's level across the top of the gauge funnel. Flat washers may be used as shims to help correct large leveling differences. Place the shims under the mounting feet. A lock washer and a hex nut should be used to secure the gauge onto the anchor bolts. Some correction of the level may be necessary after tightening the hex nuts.

The leveling knobs located above the mounting feet are secured using allen head set screws. These set screws must be loosened before the knobs can be moved. The set screws are accessible from the sides of the base. Re-tighten the set screws after leveling the gauge to help ensure that the level adjustment will not shift due to loose screws.

The gauge may be installed with the outer cover on or with it removed. Three screws hold the outer cover in place. Take out these three screws to remove the cover. Carefully remove the cover, avoiding hitting any of the internal rain gauge parts. Some of the moving parts are tied down to prevent movement and possible damage during shipping. Remove any tape, plastic ties, foam inserts, or other objects used to keep the tipping buckets from moving. The bucket assembly should move easily with the packing materials removed.

Chapter 3: Operation

The rain gauge operation is relatively simple. As rain is collected by the eight-inch diameter orifice, the rain drops are directed down through the funnel and into the bucket assembly. As soon as the bucket has collected enough rain to represent 0.01 inches (or 0.25 mm) of rain, the bucket tips. The rain drains out through the drain collection tubes and the magnet is moved past the reed switch. The reed switch closes momentarily, making an electrical contact that is used in conjunction with electronic counting and recording instruments.

Chapter 4: Calibration

4.1 Factory Calibration

Each rain gauge is thoroughly tested before being shipped to the customer. A measured amount of water is passed through the rain gauge to give an expected number of counts according to the diameter of the orifice. The bucket calibration posts have screws that are adjusted until the correct number of counts are achieved with repeated testing. The exact number of counts or nearly the exact number are recorded for each gauge. As long as the number of counts is within the specified accuracy of the gauge, the calibration will be accepted. The calibration of the gauge should not change during shipping unless the gauge becomes damaged. Checking of the gauge calibration may be made after the gauge has been installed to ensure the accuracy of the data.

4.2 Calibration Procedure

The rain gauge calibration may be checked using a graduated burette or cylinder. Wet the gauge thoroughly allowing water to flow through the gauge before beginning the test. The wetting of the gauge helps compensate for water that may adhere to portions of the gauge causing some error in the counts.

Allow a measured amount of water to flow into the gauge at a specified rate. Refer to the table shown below. The tipping bucket should begin tipping and will give the number of tips calculated. The tips may be counted by listening to the bucket assembly and manually tabulating the count or by using the electronic monitoring equipment that is to be connected to the rain gauge during its normal operation. Should the gauge appear to need adjustment, make the adjustments in small increments and retest each change at least three times.

Standard Rain Gauge Calibration Table

Model Number	Tip	Volume of Water
RG-2500	0.01"	8.24 ml
RG-2500	0.05"	41.20 ml
RG-2500	0.2 mm	6.48 ml
RG-2500	0.5 mm	16.215 ml
RG-2500-12	0.01"	18.53 ml
RG-2500-12	0.2 mm	14.60 ml
RG-2500-12	0.5 mm	36.48 ml

Use a flow rate of 1 ml per second to avoid over filling of the buckets and loss of water due to splashing. the desired accuracy is $\pm 3\%$ of the volume at 1 to 6 inches of precipitation per hour. Best results are obtained by taking a multiple of the volume of water and counting a number of tips. For example, the 0.01" calibration at 100 counts requires 824 milliliters of water.

4.3 Field Calibration

To verify the rain gauge calibration after the gauge has been installed, best results may be obtained using the calibration bottle. The bottle may be filled to the specified level and then placed into the funnel of the gauge. While the bottle slowly empties the water into the funnel other tasks may be performed if necessary. If the calibration bottle is not available, use any calibrated measuring device and slowly pour the water into the gauge. Keep track of the bucket tips either manually or through the use of the electronic monitoring equipment. For field testing methods, use an expected accuracy of $\pm 5\%$ since the control of the methods is not as good as when the testing is done in the laboratory. The total number of tips should equal the amount of water poured into the gauge, divided by the calibrated number of tips per the number of milliliters of water shown in the table. For example, a quart of water is equal to 946.3 milliliters. So for a 0.01" calibration, the number of counts for a quart of water should be $946.3 \div 8.24 = 114.8$.

4.4 Adjustments

Should the calibration of the rain gauge appear to be incorrect and in need of adjustment, change the heights of the two calibration posts adjustment screws. To change the screw heights, loosen the nut on the top of the post that locks the screw into place. Rotate each screw by a small amount only and recheck the calibration for the new screw positions. Empty all water from the buckets but do not dry off the buckets. The exact amount of water needed for a single bucket tip may be added into a bucket to see how closely the calibration post screw may be to the position needed for the bucket to tip. After obtaining this point of adjustment, tighten down the locking nuts on the calibration posts screws and test the gauge using a large amount of water at the proper flow rate and count the total number of tips.

The calibration post screws should be adjusted upward whenever the amount of water needed to cause the bucket to tip is more than the amount shown in the calibration table. Whenever less water than the amount in the table causes the bucket to tip, the screws need to be adjusted downward. The two sides of the bucket assembly should generally be at about the same calibration adjustment. There may be situations where one of the bucket calibration post screws has moved and is off more than the other screw. In this situation the single tip amount of water calibration method may be better for correcting the one side of the bucket to match the other side more closely. Do not dry the buckets during the adjustment procedure.

Carefully tighten the locking nuts on the calibration post screws after completing the adjustments. Recheck the calibration to ensure that the screws have not shifted as the nuts were tightened.

Chapter 5: Maintenance

Annual maintenance of the rain gauge is recommended. Cleaning of the gauge more often may be necessary in areas where there is a lot of leaves, dust, and other debris that falls into the gauge. Cleaning includes removal of the outer cover, rinsing and drying off of the buckets, cleaning of the drain holes, and removal of debris from all of the screens. The outer and inner funnels should also be rinsed and dried off to remove dirt, dust and insects.

The gauge calibration should be tested during the maintenance procedure and adjusted if necessary. If there is a regularly scheduled maintenance of the gauge on a monthly basis, the calibration can be tested less often.

At least once a year, or if possible, after six months of heavy operation, a drop of light machine oil should be placed onto the bearings. Do not over-oil and wipe off any excess oil.

The electrical output of the gauge should be tested to ensure that the magnet and switch assemblies are still functioning. The switch used in the gauge is a momentary contact, normally open, single pole switch. Test the switch using an ohmmeter, buzzer, or counter, or

by observing the data of the monitoring equipment normally connected to the rain gauge. Manually move the bucket assembly and look for the switch closure.

Upon completion of testing and cleaning of the gauge, replace the outer cover and funnel and recheck the level of the gauge using a carpenter's level across the top of the gauge. Adjust the leveling knobs at the mounting feet if the level is out of adjustment.

Replace or repair any of the gauge components that appear to be damaged or are not functioning properly. The outer funnel should be replaced if the rim has become dented or bent. Repaint the outer cover as needed. Replace any hardware that is missing or has become rusted and corroded. Inspect the signal and any power cables for signs of wear or damage that may expose the wires. Replace the cables as needed. Use wire ties to secure the cables to prevent damage from high winds. For best results, use conduit to protect the cables.

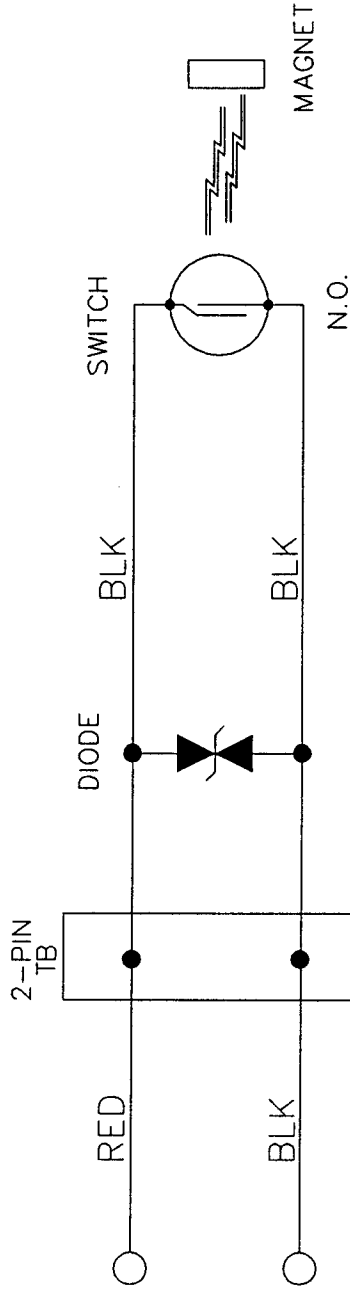
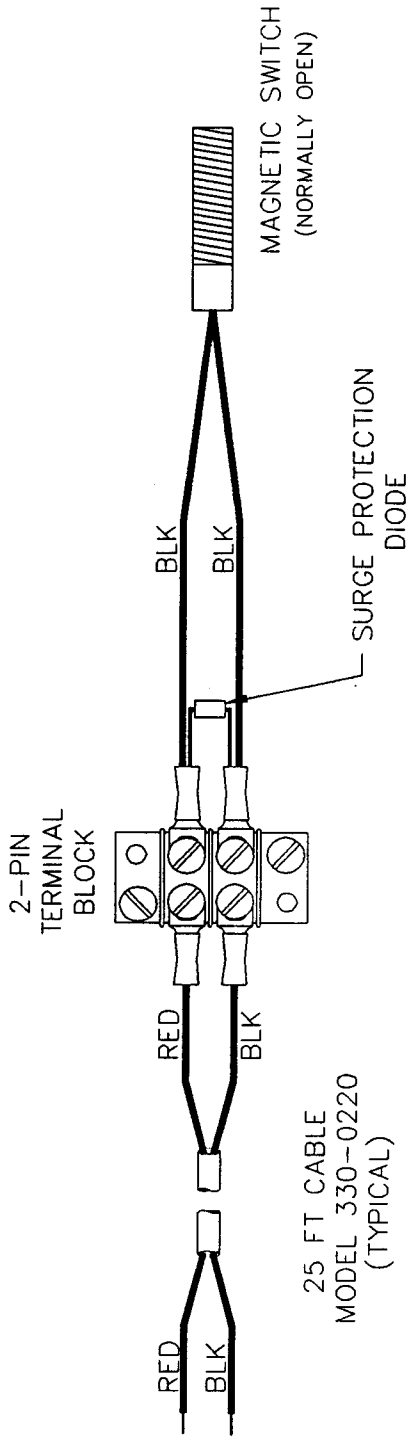
Chapter 6: Troubleshooting

Failure of the rain gauge to operate usually is the result of loose wiring. Inspect the cable connections to ensure the connections are solid and are correctly made.

Inspect the motion of the bucket assembly to ensure that the buckets move smoothly and without any interference. Check the magnet to see that it passes over the switch without any physical contact and that the switch closes when the magnet passes over it. Should the bucket motion appear to be sticky, remove the bearings and inspect them for wear. Annual replacement of the bearings may be necessary in areas where there are high amounts of rain.

Check the inlet funnel and funnel screens for blockage whenever the rain gauge operation appears to be low or missing. Also inspect the drain tubes for debris that may interfere with the bucket motion.

Whenever the rain gauge output appears to be too high, check to ensure that the gauge is still level and recheck the calibration.



27 VDC
MAXIMUM

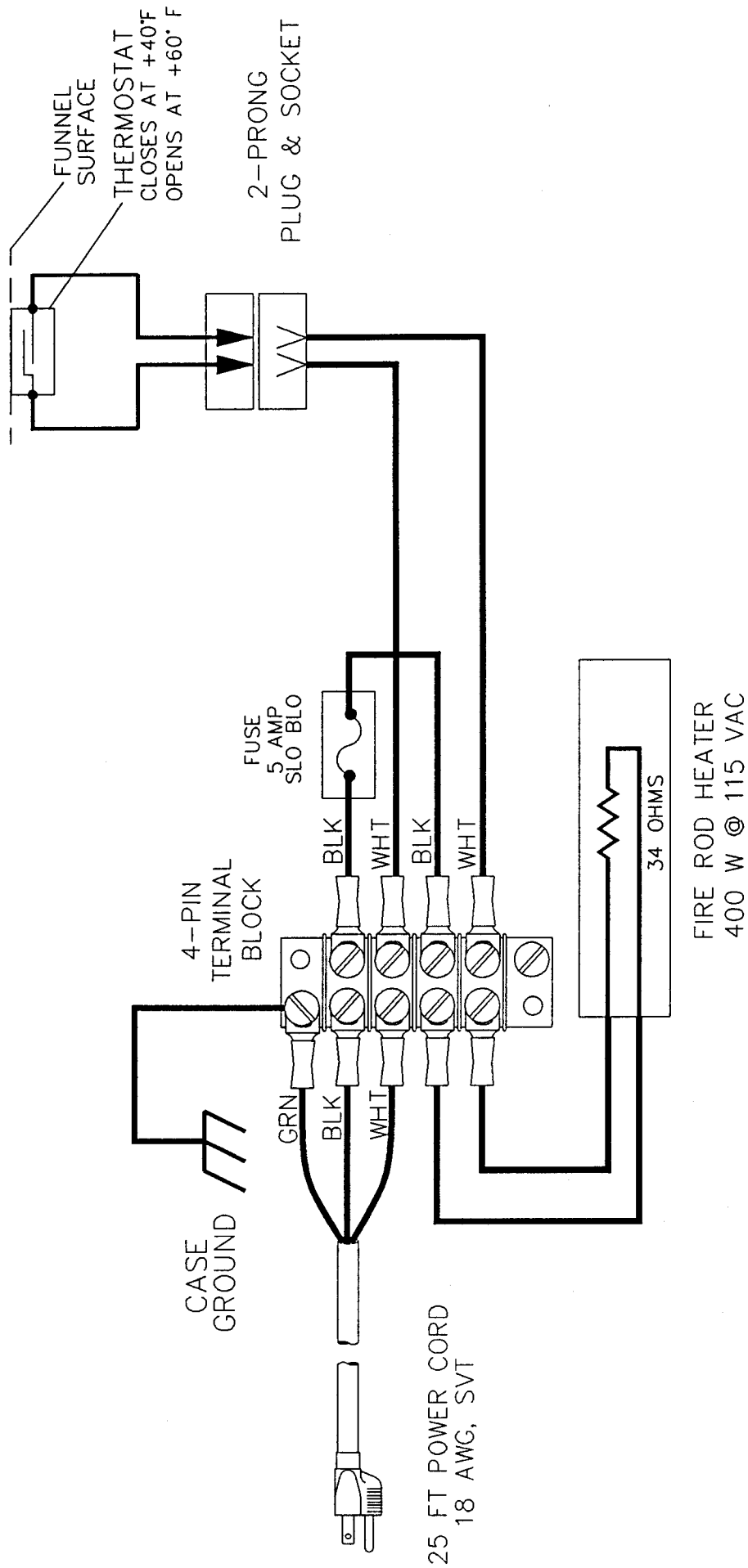
3 WATTS
0.25A @ 175 VDC
MAXIMUM

TYPICAL CLOSURE TIME
0.1 SECOND

NOTES:

1. TYPICAL OF BOTH HEATED AND UNHEATED RAIN GAUGES.

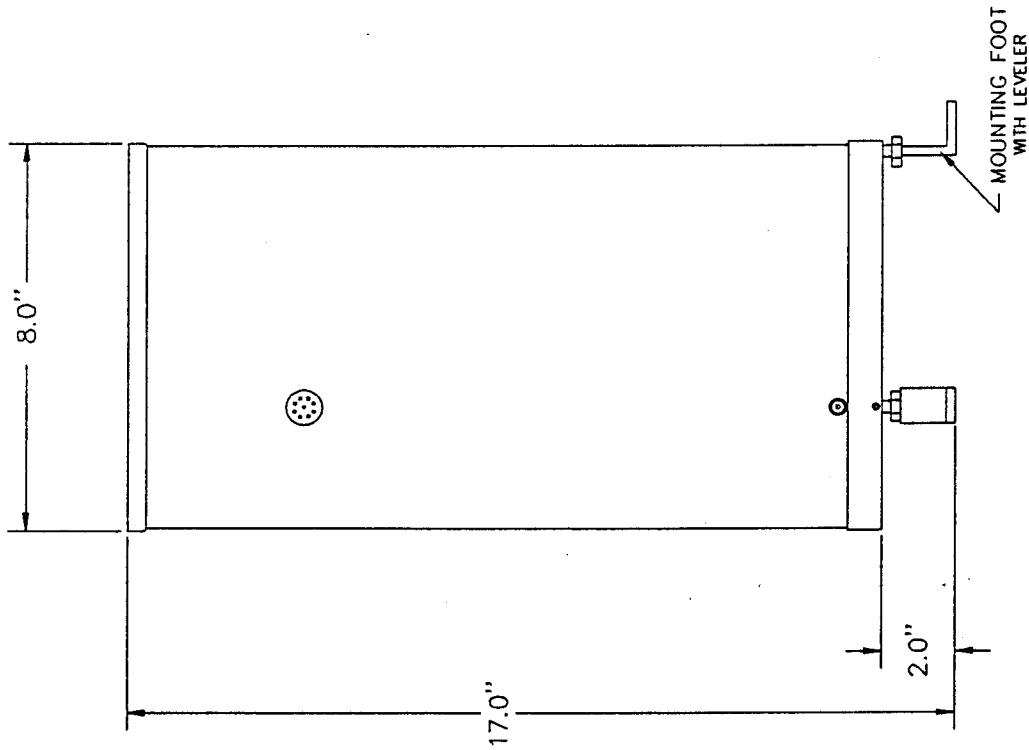
C	
TITLE SCHEMATIC, SWITCH, MAGNETIC, TIPPING BUCKET RAIN GAUGE	
MODEL USAGE	SHEET 1 OF 1
BY	SCALE DWG. NO.
DATE 11-25-97	NONE 10000346



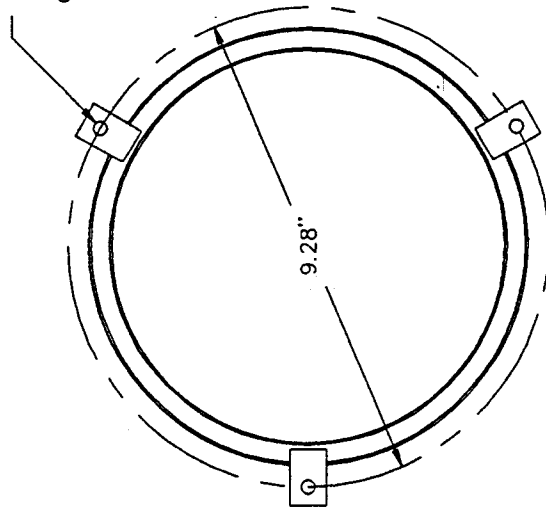
WARNING

115 VAC WILL BE ALIVE ON THE 4-PIN TERMINAL BLOCK WHENEVER THE POWER CORD IS PLUGGED INTO A POWER OUTLET. TERMINALS ARE EXPOSED INSIDE THE RAIN GAUGE.

C	
TITLE SCHEMATIC, HEATER POWER, TIPPING BUCKET RAIN GAUGE	
MODEL USAGE	DWG. NO.
BY RGN	SCALE NONE
DATE 11-25-97	SHEET 1 OF 1
10000347	

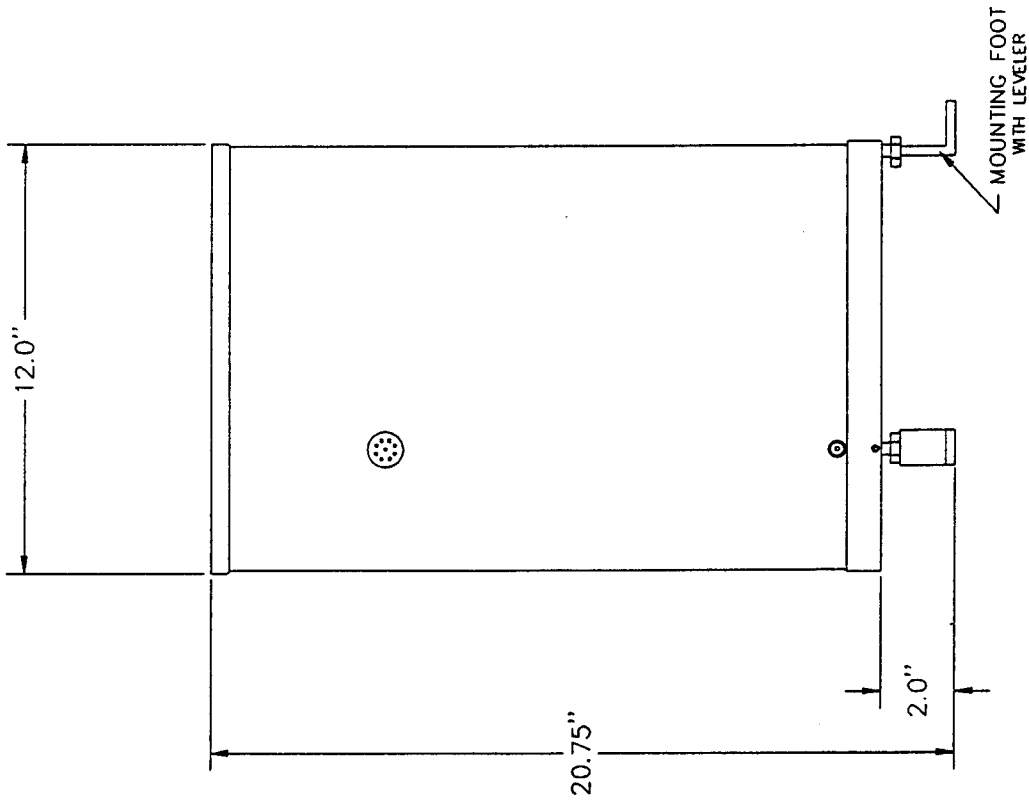


0.375 DIA
3 PLCS
@ 120 DEG

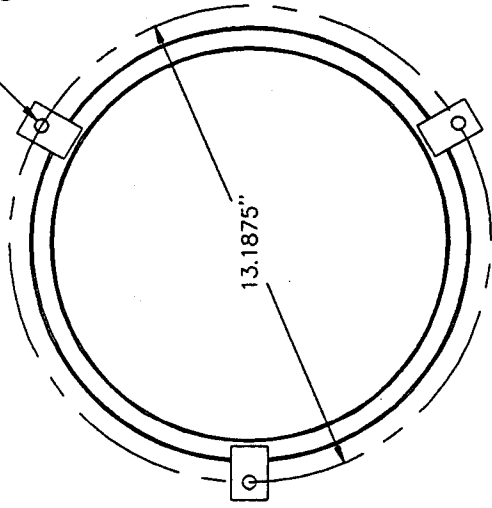


MOUNTING FEET PATTERN

C	
TITLE OUTLINE DIMENSION DRAWING	
8 INCH RAIN GAGE	
MOD. USAGE	2500
BY RGN	SCALE DWG. NO.
DATE 1-07-93	NONE
SHEET 1 OF 1	
930116	

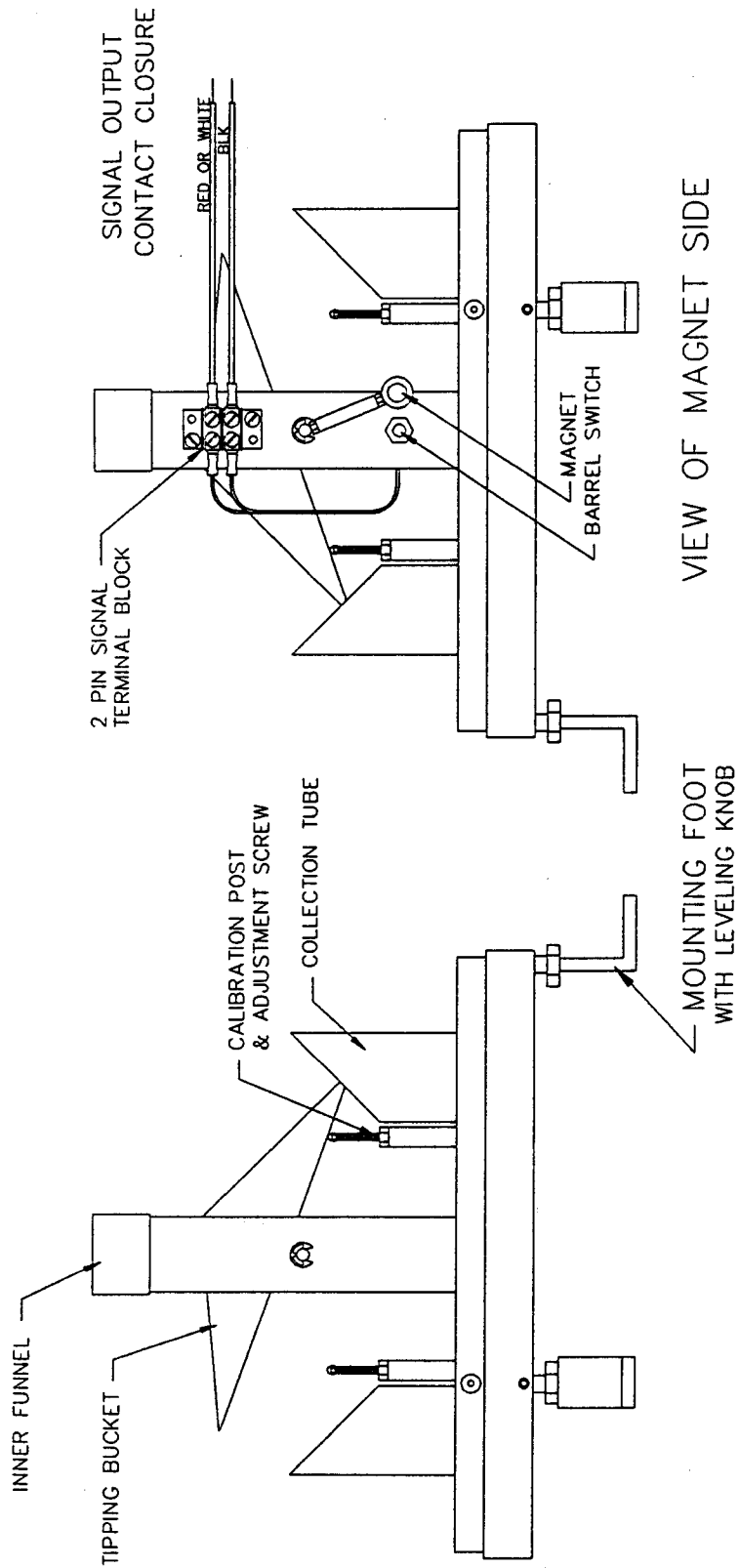


0.375 DIA
3 PLCS
@ 120 DEG



MOUNTING FEET PATTERN

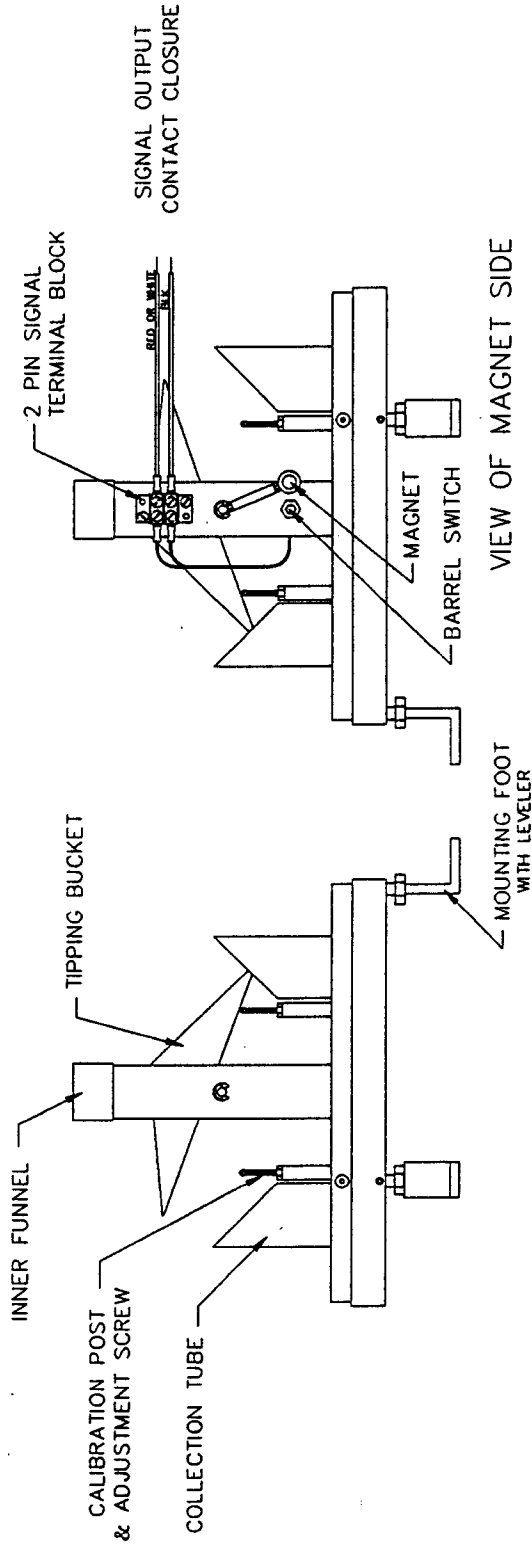
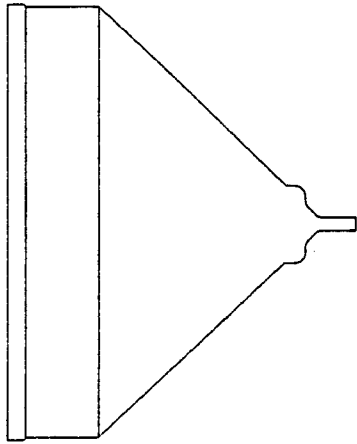
C	
TITLE	
OUTLINE DRAWING	
12 INCH RAIN GAGE	
MOD. USAGE	2500-12
BY	RCN
SCALE	DWG. NO.
DATE	1-07-93
SHEET 1 OF 1	
930118	



8 INCH RAIN GAGE BASE ASSEMBLY

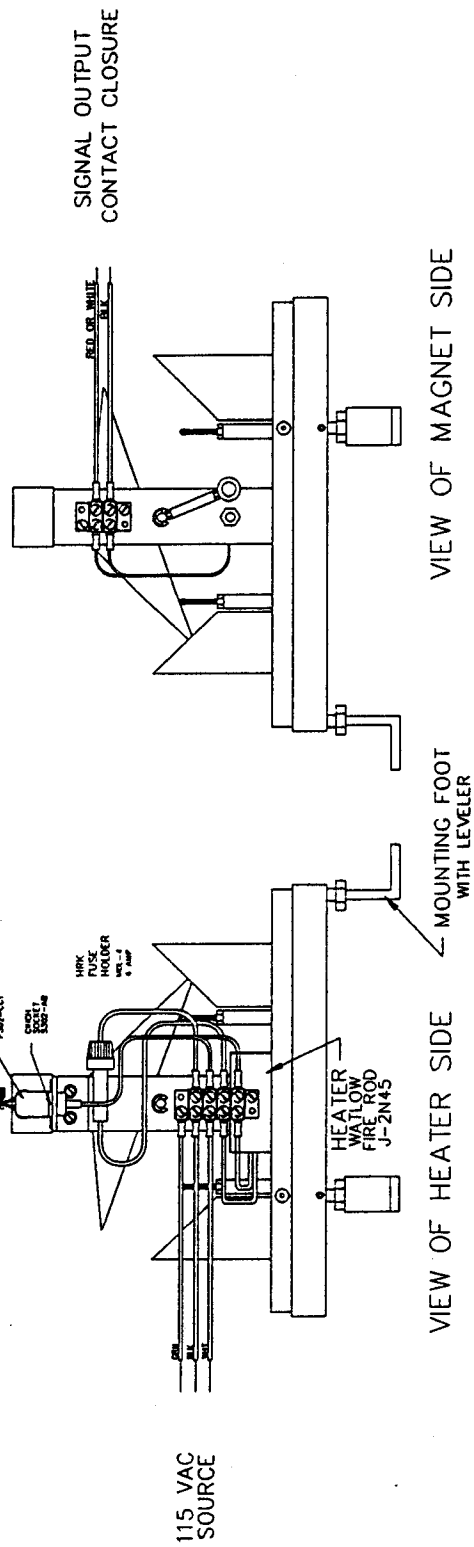
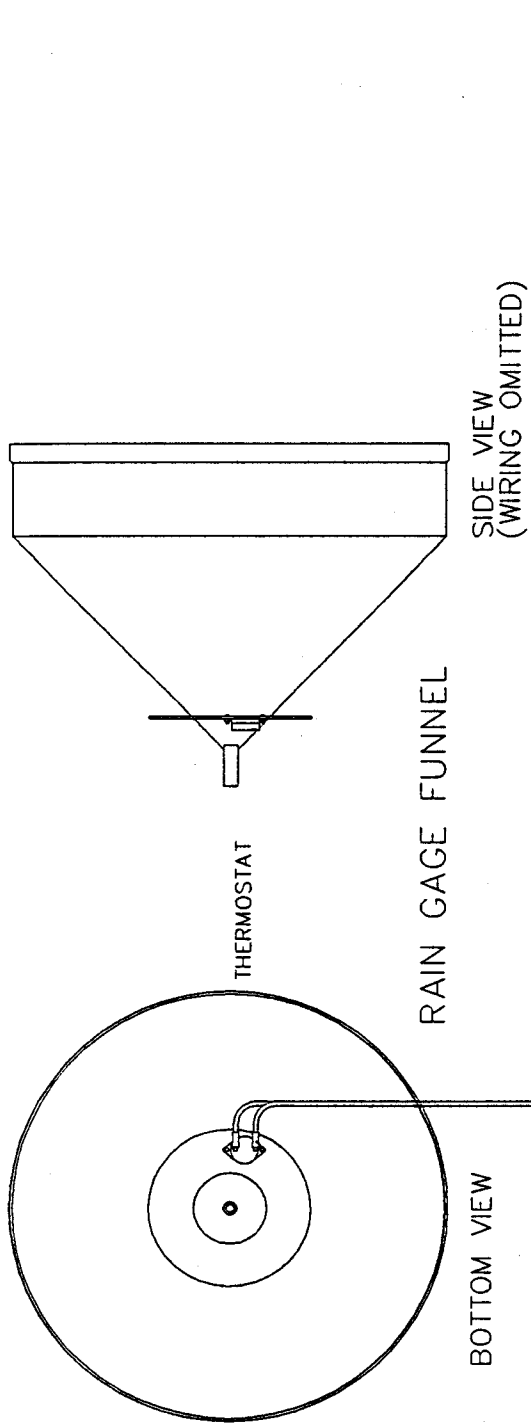
C	
TITLE OUTLINE, BASE ASSEMBLY	
8 INCH RAIN GAGE	
MOD. USAGE	2500
BY	RCN
SCALE	DWG. NO.
DATE	1-07-93
SHEET 1 OF 1	
930115	

RAIN GAGE FUNNEL



12 INCH RAIN GAGE BASE ASSEMBLY

C	
TITLE OUTLINE, BASE ASSEMBLY 12 INCH RAIN GAGE	
MOD. USAGE	2500-12 SHEET 1 OF 1
BY RGN	SCALE DWG. NO.
DATE 1-07-93	NONE
930117	



RAIN GAGE BASE ASSEMBLY










NOTES - 1. 4 PIN TERMINAL BLOCK IS POSITIONED BEHIND HEATER.
 2. OUTER COVER NOT SHOWN.

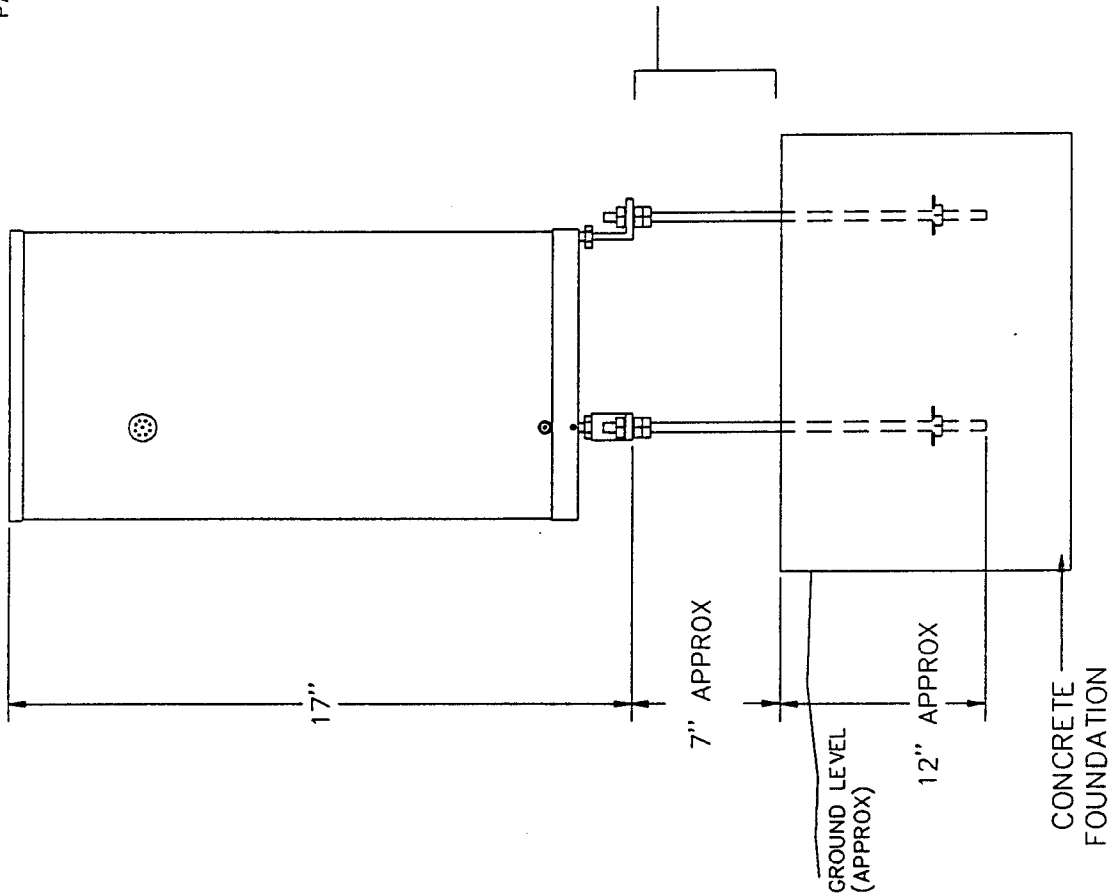
C	
TITLE	WIRING DIAGRAM
12 INCH HEATED RAIN GAGE	
MOD. USAGE	2500E-12
BY	RCN
SCALE	DWG. NO.
DATE	11-12-92
NONE	921109

REVISED AUG 1994

MOUNTING BOLT ASSEMBLY DETAIL

PART NUMBERS

72270101	5/16 HEX NUT		RAIN GAGE SECURING NUT
72341501	5/16 LOCK WASHER		LOCATION OF RAIN GAGE FOOT
72317502	5/16 FLAT WASHER		HEIGHT ADJUSTING NUT
72317502	5/16 FLAT WASHER		LOCKING NUT
72270101	5/16 HEX NUT		
72270101	5/16 HEX NUT		
72500000	5/16 THREADED ROD		
72317602	3/8 FLAT WASHER		ANCHOR WASHER
72270101	5/16 HEX NUT		ANCHOR-NUT



TYPICAL VIEW

FOR INSTALLATIONS USING A 24" ALTER STYLE WIND SCREEN THIS HEIGHT MUST BE ADJUSTED SO THAT THE TOP EDGE OF THE RAIN GAGE IS WITHIN 1 INCH OF THE TOP EDGE OF THE WIND SCREEN LEAVES. SET BOLT HEIGHT PRIOR TO POURING CONCRETE FOUNDATION. TYPICAL LENGTH OF THREADED ROD WILL BE APPROXIMATELY 24 INCHES.

SET HEIGHT ADJUSTING NUTS FOR ALL THREE OF THE RAIN GAGE MOUNTING FEET UNTIL THE RAIN GAGE IS LEVEL ACCORDING TO THE SPIRIT BUBBLE LEVEL LOCATED ON THE RAIN GAGE BASE.

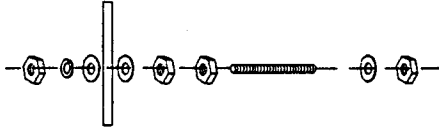
FOR WOODEN PLATFORMS THERE ARE EXTRA NUTS AND WASHERS.

C	
TITLE RAIN GAGE INSTALLATION KIT ASSEMBLY	
MOD. USAGE	2500 SHEET 1 OF 1
BY RGN	SCALE DWG. NO.
DATE 1-07-93	NONE 930222

MOUNTING BOLT ASSEMBLY DETAIL

PART NUMBERS

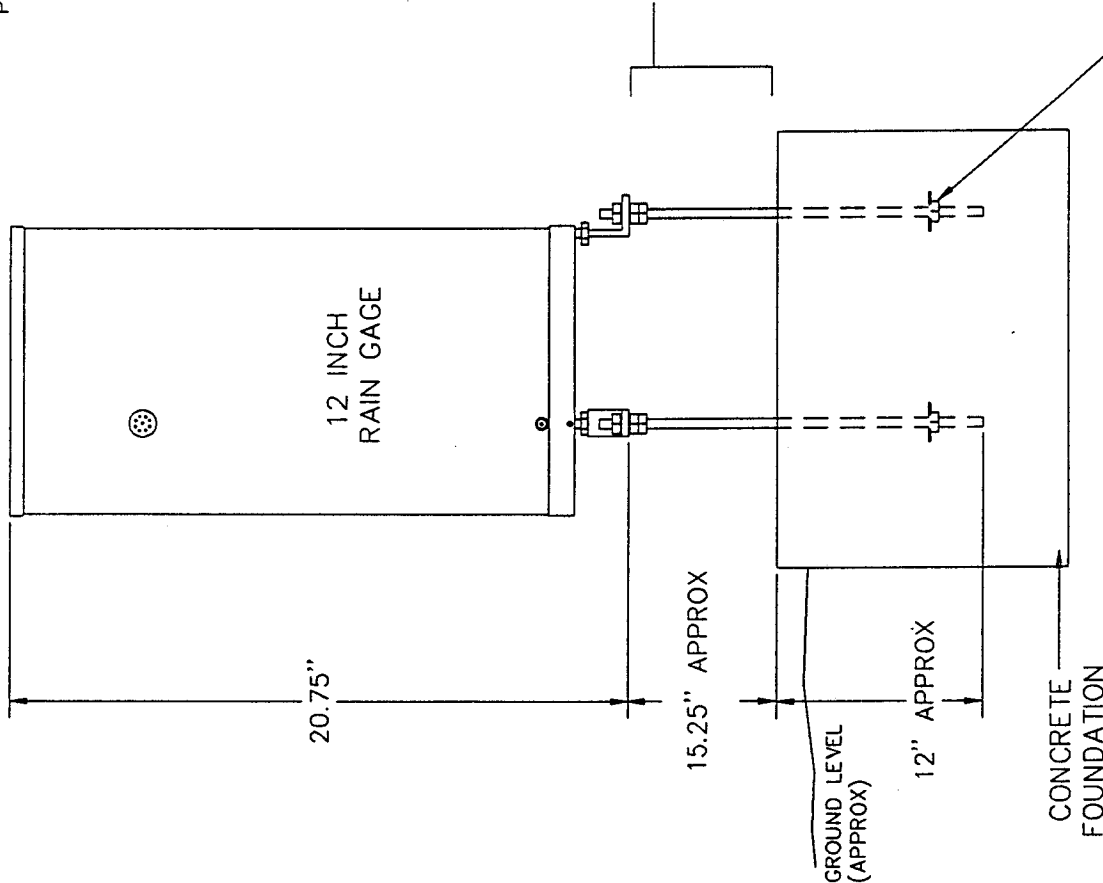
72270101	5/16 HEX NUT	RAIN GAGE SECURING NUT
72341501	5/16 LOCK WASHER	
72317502	5/16 FLAT WASHER	LOCATION OF RAIN GAGE FOOT
72317502	5/16 FLAT WASHER	
72270101	5/16 HEX NUT	HEIGHT ADJUSTING NUT
72270101	5/16 HEX NUT	LOCKING NUT
72500000	5/16 THREADED ROD	
72317602	3/8 FLAT WASHER	ANCHOR WASHER
72270101	5/16 HEX NUT	ANCHOR NUT



TYPICAL OF THREE EACH

FOR INSTALLATIONS USING A 36" ALTER STYLE WIND SCREEN THIS HEIGHT MUST BE ADJUSTED SO THAT THE TOP EDGE OF THE RAIN GAGE IS WITHIN 1 INCH OF THE TOP EDGE OF THE WIND SCREEN LEAVES. SET BOLT HEIGHT PRIOR TO POURING CONCRETE FOUNDATION. TYPICAL LENGTH OF THREADED ROD WILL BE APPROXIMATELY 30 INCHES.

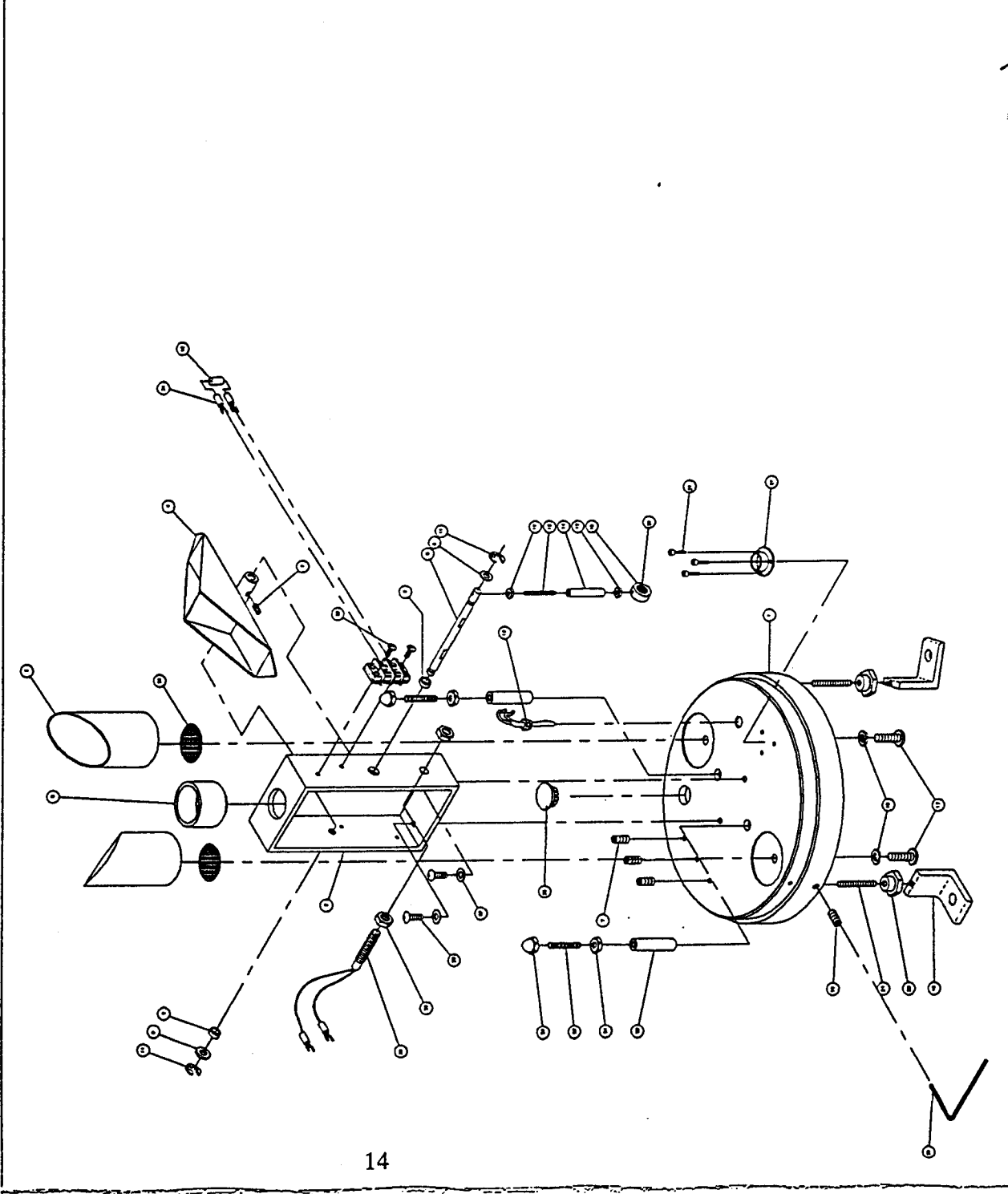
SET HEIGHT ADJUSTING NUTS FOR ALL THREE OF THE RAIN GAGE MOUNTING FEET UNTIL THE RAIN GAGE IS LEVEL ACCORDING TO THE SPIRIT BUBBLE LEVEL LOCATED ON THE RAIN GAGE BASE.



TYPICAL VIEW

C	
TITLE RAIN GAGE INSTALLATION	
KIT ASSEMBLY	
MOD. USAGE -2500	SHEET 1 OF 1
BY RCN	SCALE (DWG. NO.) NONE
DATE 1-07-93	930223

QTY	UNIT	DESCRIPTION	REF. NO.
38	1 EA	WRENCH, ALLEN 1/8"	71400009
37	3 EA	SCREW, 2-5/8 X 3/8 SOCKET HD SS	71120003
36	2 EA	SCREW, 2-1/2 X 3/8 DA	10000070
35	1 EA	PLATE, HOLE 5/8" DIA W/SLIP	40040010
34	8 EA	WASHER, 5/8" DIA, WHTL	41100000
33	1 EA	WATERPROOF BLOCK 3 POSITION	31101140
32	3 EA	#2-32 X 1/2" PHN HEAD SCREW SS	71000119
31	1 EA	LEVEL, SPIRIT BARBLE	64001001
30	1 EA	SWITCH, 3/4" ON	31001001
29	1 EA	BUCKET 3/4" DIA	25000003
28	3 EA	#10-32 X 1/2" BUTTON HEAD ALLEN HEAD SCREW(SS)	71180003
27	3 EA	#10 FLAT WASHER SS	71180003
26	2 EA	#8-32 ACORN NUTS W/SLIP	21140003
25	3 EA	#8-32 X 1/2" SHD SS	71050003
24	3 EA	#8-32 UNC NUTS (STEEL)	71220001
23	3 EA	POST, 1/4" DIA SCREW W/SLIP	10000030
22	3 EA	1/4-20 UNC X 1/2" ALL-THREAD SET SCREW	21180001
21	3 EA	1/8-32 UNC X 1/2" ALL-THREAD SET SCREW	71050003
20	3 EA	WRENCH, LEVELING	10000009
19	3 EA	FOOT, LEVELING	10000008
18	2 EA	1/2" LOCK WASHERS	71341140
17	2 EA	1/4-20 X 3/8" BRASS HEAD SCREW	71004002
16	1 EA	3/8" DIA SPRING W/SLIP	41500003
15	1 EA	HOLDER, SOCKET	10000017
14	1 EA	COVER, SOCKET ARM	10000018
13	1 EA	#8-32 UNC X 1/2" ALL-THREAD SHD	71150001
12	2 EA	#8-32 UNC NUTS (STEEL)	71211401
11	3 EA	E-CLIP .25 X .210 X .210 SS	71131102
10	1 EA	BRASS PROTECTION HOSE	44311501
9	2 EA	1/4-20 X 1/2" NON-PLATED BRASS NUTS	71010000
8	1 EA	SWIRT, TIPPING BUCKET	10000007
7	3 EA	#8-32 X 3/16 SET SCREW	31140001
6	2 EA	THRT 3/8" X 1/2" W/SLIP	71310002
5	1 EA	BRASS FUNNEL	10000008
4	1 EA	BUCKET ASSEMBLY	10000014
3	2 EA	TUBE COLLECTION	10000019
2	1 EA	BUCKET BUCKET MOUNTING	10000018
1	1 EA	BASE 8"	10000110



D

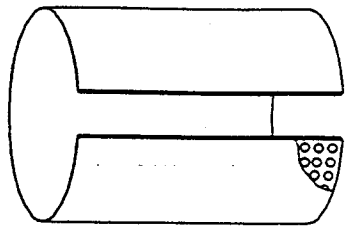
TITLE ASSEMBLY, RAIN GAUGE
TIPPING BUCKET, 8" DIA

MODEL USAGE 2500 SHEET 1 OF 1
BY RN SCALE 1:1 DWG. NO. 950106
DATE 1-12-95

SILVER TAPE



2" x 11"



INSULATING FOIL
25" x 11"



FIREROD HEATER



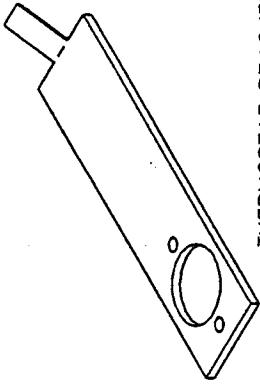
HEAT SINK TUBE



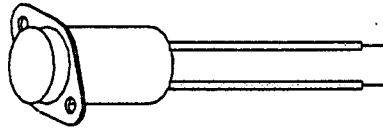
PLUG



SOCKET



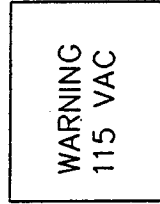
THERMOSTAT BRACKET
(SHOWN IN INVERTED POSITION)



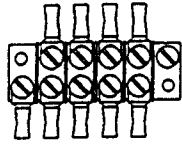
THERMOSTAT



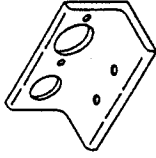
CLAMP



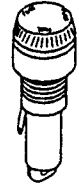
WARNING LABEL



4 PIN
TERMINAL BLOCK
& 9 SPADE LUGS



CONNECTOR & FUSE
HOLDER BRACKET



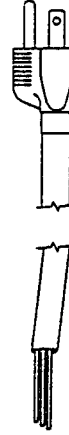
FUSE HOLDER
& HEX NUT



FUSE
5A, 3AG



STRAIN RELIEF



POWER CORD

971001	REVERSE 1-STAT & MOUNT BRACKET	10-6-97
ECO1	DESCRIPTION	DATE
C		
TITLE PARTS IDENTIFICATION		
RAIN GAGE ELECTRIC HEATER KIT		
MODEL USAGE	260-2500H	SHEET 1 OF 1
BY	RCN	SCALE DWG. NO.
DATE	10-6-97	NONE 10000323

DRAWING NOT TO SCALE

PARTS LIST

TIPPING BUCKET RAIN GAUGE
MODEL RG-2500

8 INCH ORIFICE, 0.01 INCH PER TIP

NL P/N	DESCRIPTION	QTY
10000006	FUNNEL, INNER	1
10000007	SHAFT, BUCKET	1
10000008	FOOT, LEVELING	3
10000009	KNOB, LEVELING	3
10000011	BRACKET, BUCKET	1
10000024	BUCKET, 0.01"	1
10000026	SCREEN, 1-5/8 DRAIN TUBE	2
10000027	HOLDER, MAGNET 3/8 DIA	1
10000028	COVER, MAGNET ARM	1
10000029	TUBE, COLLECTION	2
10000030	POST, CALIBRATION SCREW	2
10000116	FUNNEL, 8" ANODIZED	1
10000139	COVER, 8" RAIN GAUGE	1
10000140	BASE, 8" RAIN GAUGE	1
21051401	TERMINAL BLOCK, 2 PIN	1
25000002	MAGNET, 3/8 DIA	1
28000402	PLUG, VENT .875 DIA BLACK	3
40803301	PLUG, HOLE 5/8 DIA NYLON NATURAL	1
41900600	SPADE LUG #6 NYLON INSULATED	6
46311501	SURGE PROTECTION DIODE	1
51001802	SWITCH, MAGNET PROXIMITY, 12" LEADS	1
64802001	LEVEL, BUBBLE SPIRIT	1
71010000	BEARING, 0.25X0.375 SS MINI	2
71131102	E-RING, 1/4IDX.210X.029 SS	2
72082102	SCRU, 6-32X3/8 BIND HD SLOT SS	2
72084002	SCRU, 1/4-20X5/8 BIND HD SLOT SS	2
72122003	SCRU, 2-56X3/8 SOCKET HD SS	3
72146301	SCRU, 8-32X3/16 SET SS	5
72148201	SCRU, 1/4-20X1/4 SET SS	3
72188002	SCRU, 10-32X1/2 BUTN HD SOCKT CAP SS	2
72188003	SCRU, 10-32X1/2 HEX WASHER HD SS	3
72211401	NUT, 6-32 HEX SS 5/16X7/64	2
72225201	NUT, 8-32 HEX SS 11/32X1/8	2
72246302	NUT, ACORN 8-32 HEX SS .330X.375	2
72300301	WASHER, FLAT NO. 10 SS 13/64X7/16X.031	5
72310502	WASHER, FLAT 1/4 TEFLON .25X.50X.062	2
72341401	WASHER, SPLIT 1/4 SS .255X.493X.062	2
72450601	STUD, 6-32X2 SS	1
72450602	STUD, 8-32X2 SS	2
72450603	STUD, 10-32X1-1/2 SS	3
72600000	WRENCH, ALLEN 1/8	1
A100785	SCREEN, 2" DIA, SMALL FUNNELL	1
A100786	SCREEN, 7-5/8, LARGE FUNNEL	1



WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

OMEGA is glad to offer suggestions on the use of its various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

Every precaution for accuracy has been taken in the preparation of this manual; however, OMEGA ENGINEERING, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in the manual.

SPECIAL CONDITION: Should this equipment be used in or with any nuclear installation or activity, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the equipment in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA ENGINEERING Customer Service Department. **BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS).** The assigned AR number should then be marked on the outside of the return package and on any correspondence.

FOR **WARRANTY** RETURNS, please have the following information available **BEFORE** contacting OMEGA:

1. P.O. number under which the product was **PURCHASED**,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS OR **CALIBRATION**, consult OMEGA for current repair/calibration charges. Have the following information available **BEFORE** contacting OMEGA:

1. P.O. number to cover the **COST** of the repair/calibration,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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